

REMARKS

Claims 1-20 are pending in this application. Claims 10-19 have been withdrawn from further consideration. Claim 5 has been amended. Reconsideration of the present application in view of the foregoing amendments and following remarks is respectfully requested.

Claim 5 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner states that the phrase “the functional layer in the areas is in direct contact with a layer situated underneath the at least one first sacrificial layer” renders claim 5 indefinite. In response, Applicants have amended claim 5 to recite that “the functional layer in the areas of the immovable elements where the at least one sacrificial layer is removed is in direct contact with a layer situated underneath the at least one first sacrificial layer,” clearly indicating that the at least one sacrificial layer is removed in “the areas of the immovable elements.” Accordingly, Applicants submit that amended claim 5 is in compliance with 35 U.S.C. § 112, second paragraph.

Claims 1 and 5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Reichenbach et al., WO 01/46066 (“Reichenbach”; the Examiner uses US 2004/0065932 as the English-language equivalent). Applicants respectfully submit that this rejection should be withdrawn for at least the following reasons.

To anticipate a claim under § 102(b), a single prior art reference must identically disclose each and every claim element. See Lindeman Maschinenfabrik v. American Hoist and Derrick, 730 F.2d 1452, 1458 (Fed. Cir. 1984). If any claimed element is absent from a prior art reference, it cannot anticipate the claim. See Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997). Additionally, not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention, namely the inventions of the rejected claims, as discussed above. See Akzo, N.V. v. U.S.I.T.C., 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986). To the extent that the Examiner may be relying on the doctrine of inherent disclosure for the anticipation rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claim 1 recites, in relevant parts, **“a substrate to which is connected the functional layer via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer, wherein: the movable elements are exposed by partially removing the at least one first sacrificial layer in the area of the movable elements.”** In the invention recited in claim 1, both the sacrificial layer (in areas away from the movable elements) and the movable elements (which are exposed by partially removing the at least one first sacrificial layer in the area of the movable elements) are present, as well as the feature of **“a substrate to which is connected the functional layer via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer.”** In the present Office Action, the Examiner states that “claims 1 and 5 are rejected based on the single device taught in the method steps of Figures 1-13 at the one point in the manufacturing process between Figures 9 and 10, which is after wet etching but before vapor etching of the sacrificial layer,” (Office Action, p. 16), i.e., the Examiner contends that this intermediate state of Reichenbach reached after “[t]he movable elements are exposed by partially removing the at least one first sacrificial layer in the area of the movable elements using wet etching (p. 4, paragraph 48)” satisfies the claimed features of claim 1. However, Applicants note that the actual disclosure of the cited section of Reichenbach do not support the Examiner’s rejection, i.e., Reichenbach does not teach or suggest a device in which the sacrificial layer is both bonded to the substrate and the functional layer and also removed in such a way that the movable elements are exposed, as recited in amended claim 1. In paragraph 48 of Reichenbach, it is indicated that “[i]n the wet etching phase (HF solution), the majority of the oxide 30 is first removed,” and “[i]n the ensuing vapor etching, the remainder of the oxide 30 is removed.” Since the Examiner is relying on a state of the layer system that is not explicitly shown or described in Reichenbach (the state between Figs. 9 and 10), the Examiner is contending that the disclosure of Reichenbach inherently discloses the claimed features of the present invention. However, there is no “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art”: although Reichenbach states that “the majority of the oxide 30 is first removed” in the vapor etching, there is no indication regarding which portions of the sacrificial layer 30 is removed in the vapor etching, and there is no reason why sufficient portions of the sacrificial layer 30 would necessarily have to remain such that the “substrate . . . is connected [to] the functional layer **via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer.**” To the extent the Examiner may be contending that it is probable that sufficient

portions of the sacrificial layer 30 would remain after the vapor etching such that the “substrate . . . is connected [to] the functional layer **via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer**,” inherent disclosure requires that the alleged inherent feature be inevitable, not merely possible or probable. See In re Robertson, 169 F.3d 743 (Fed. Cir. 1999). In any, the most reasonable technical analysis would suggest that at least the upper portion of the sacrificial layer is removed by the vapor etching (since paragraph 48 clearly indicates that the etching medium is injected from above the sacrificial layer), such that the substrate is not connected to the functional layer via the sacrificial layer.

Independent of the above, Applicants note that not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention. See Akzo, N.V. v. U.S.I.T.C., 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986). In this regard, the standard for enablement is “whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.” (See United States v. Teletronics, Inc., 857 F.2d 778, 785, 8 U.S.P.Q.2d 1217, 1223 (Fed. Cir. 1988))). Applicants note that Reichenbach clearly does not enable one of ordinary skill in the art to make the present claimed invention: there is no explicit disclosure in Reichenbach regarding the claimed configuration (as clearly admitted by the Examiner, since the Examiner is relying on an allegedly implied state between Figs. 9 and 10), and there is no suggestion regarding how the vapor etching should be performed to arrive at the claimed layer arrangement, or which portion of the sacrificial layer should be etched. Given this amorphous disclosure of Reichenbach, there is no reasonable basis to conclude that one of ordinary skill in the art would have been enabled by the disclosure of Reichenbach to arrive at the Applicants’ claimed invention.

For at least the foregoing reasons, Applicants note that even if the various figures of Reichenbach were considered in combination, the figures of Reichenbach clearly do not disclose all of the features of claim 1, i.e., “a surface micromechanical structure produced in the functional layer and including movable elements and immovable elements”; “at least one electrically non-conductive first insulation layer”; “at least one first sacrificial layer”; and “a substrate to which is connected the functional layer via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer,

wherein: the movable elements are exposed by partially removing the at least one first sacrificial layer in the area of the movable elements.” Therefore, claim 1 and its dependent claim 5 are not anticipated by Reichenbach.

Claims 2 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Reichenbach et al., WO 01/46066 (“Reichenbach”; the Examiner uses US 2004/0065932 as the English-language equivalent). Applicants respectfully submit that this rejection should be withdrawn for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), not only must the prior art teach or suggest each element of the claim, the prior art must also suggest combining the elements in the manner contemplated by the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F. 2d 931, 934 (Fed. Cir. 1990); In re Bond, 910 F. 2d 831, 834 (Fed. Cir. 1990). The Examiner bears the initial burden of establishing a prima facie case of obviousness. The Examiner must show, inter alia, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. See M.P.E.P. §2143. To the extent that the Examiner may be relying on the doctrine of inherent disclosure for the anticipation rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claim 2, which depends on claim 1, recites, in relevant parts, “an electroconductive layer that is structured and that is contactingly situated vertically between the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer.” Claim 20 recites substantially similar features as the features of claim 1, i.e., “a substrate to which is connected the functional layer via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer, wherein: the movable elements are exposed by partially removing the at least one first sacrificial layer in the area of the movable elements.” In addition, claim 20 further recites that “the component includes at least one area where: the at least one electrically non-conductive first insulation layer is arranged over the substrate; a conductive layer is arranged over the at least one

electrically non-conductive first insulation layer; and the at least one first sacrificial layer is arranged over the conductive layer.” In support of the rejection of claims 2 and 20, the Examiner contends that the embodiment shown in Figs. 17-18 of Reichenbach discloses the features of claims 2 and 20, with the exception of the feature that the “the movable elements are exposed by partially removing the at least one first sacrificial layer in the area of the movable elements.” The Examiner further contends that it would have been obvious that the embodiment of Figs. 17 and 18 would have been “formed by the same method steps described with regard to Figures 5-12,” and that “at the point during the manufacture of the article of Figure 18 in which the wet etching has occurred but the vapor etching has not [occurred] the first sacrificial layer would be partially removed in the area of the movable elements.” Initially, Applicants respectfully note that the actual description associated with Figs. 17 and 18 of Reichenbach does not provide any indication of how the embodiment shown in Figs. 17 and 18 would have been formed, and therefore the Examiner’s conclusion is pure speculation. Even if one assumes for the sake of argument that the Examiner’s assertion regarding the formation of the embodiment shown in Figs. 17 and 18 is correct, the method steps described in connection with Figs. 5-12 of Reichenbach clearly do not teach or suggest the feature of “a substrate to which is connected the functional layer via the at least one electrically non-conductive first insulation layer and the at least one first sacrificial layer,” as recited in claim 20 and claim 1 (on which claim 2 depends), for the reasons stated above in connection with the anticipation rejection of claim 1.

For at least the foregoing reasons, Applicants submit that Reichenbach clearly does not render obvious claims 2 and 20.

Claims 3-4 and 6-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Reichenbach in view of Laermer, WO 02/38492 (“Laermer”; the Examiner uses US 2004/0112937 as the English-language equivalent). Applicants respectfully submit that this rejection should be withdrawn for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), not only must the prior art teach or suggest each element of the claim, the prior art must also suggest combining the elements in the manner contemplated by the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F. 2d 931, 934 (Fed. Cir. 1990); In re Bond, 910 F. 2d 831, 834 (Fed. Cir. 1990). The Examiner bears the initial burden of establishing a prima facie case of obviousness. The Examiner must show, inter alia, that there is some suggestion

or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. See M.P.E.P. §2143. To the extent that the Examiner may be relying on the doctrine of inherent disclosure for the anticipation rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Since claims 3, 4, 6 and 7 depend on claim 1, and since Laermer fails to cure the deficiencies of Reichenbach as applied against parent claim 1, the combination of Reichenbach and Laermer fails to render obvious dependent claims 3, 4, 6 and 7.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Reichenbach and Laermer as applied to claim 3, and further in view of U.S. Patent No. 5,490,034 (“Zavracky”). Since claim 8 ultimately depends on claim 1, and since Zavracky fails to cure the deficiencies of Reichenbach and Laermer as applied against parent claim 1, the combination of Reichenbach, Laermer and Zavracky fails to render obvious dependent claim 8.

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Reichenbach and Laermer as applied to claim 3, and further in view of Zavracky and U.S. Patent No. 6,753,559 (“Chatterjee”). Since claim 9 ultimately depends on claim 1, and since Zavracky and Chatterjee fail to cure the deficiencies of Reichenbach and Laermer as applied against parent claim 1, the combination of Reichenbach, Laermer, Zavracky and Chatterjee fails to render obvious dependent claim 9.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that pending claims 1-9 and 20 are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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